UNICAM
Università di Camerino
1336

Scuola di Architettura e Design 'Eduardo Vittoria'

HR EXCELLENCE IN RESEARCH

Seminar

Hurricane Loss Analysis for Single-Family Houses under Current and Changing Climate Scenarios

Michele Barbato

Associate Professor of Structures,
Dept. of Civil & Environmental Engineering
Louisiana State University, Baton Rouge (LA), USA

Camerino lunedì **11 giugno 2018** **ore 17.30**

Polo didattico del Campus universitario - Scuola di Giurisprudenza - Aula 1

Michele Barbato
Associate Professor of Structures, Dept. of Civil & Environmental Engineering
Louisiana State University, Baton Rouge (LA), USA, mbarbato@lsu.edu

Abstract
Hurricanes are among the most costly natural hazards affecting communities worldwide, in terms of both property damage and loss of life. The landfall of a hurricane involves different hazard sources (i.e., wind, windborne debris, flood, and rain) that interact to generate the hazard scenario for a given structure. Hence, a novel multi-hazard methodology is required to accurately estimate the risk due to hurricanes and to provide easily interpreted guidance to insurers, emergency administrators, constructors, and owners on how to reduce potential losses. This presentation will introduce a probabilistic Performance-Based Hurricane Engineering (PBHE) framework that is based on the total probability theorem. The proposed framework disaggregates the risk assessment analysis into independent elementary components and innovatively accounts for concurrent and interacting hazard sources as well as for their possible sequential effects. The PBHE framework will be used for the loss analysis of single-family in the US Gulf Coast through a cost/benefit comparison of different hazard mitigation techniques. A projection model for future hurricane hazard under changing climate conditions will be also illustrated and the effects in terms of expected losses under different climate change scenarios will be discussed.

Short Bio
Dr. Michele Barbato is an Associate Professor in the Department of Civil and Environmental Engineering (CEE) at Louisiana State University (LSU). He received his "Laurea" degree in Civil Engineering from the University of Rome "La Sapienza" (Rome, Italy) in 2002, and his M.S. and Ph.D. in Structural Engineering in 2005 and 2007, respectively, at the University of California at San Diego (La Jolla, CA, USA). He is author or co-author of more than 120 technical publications, including 40 peer reviewed articles published in renowned archival journals, 3 book chapters, and many papers presented in national and international conferences. He has been the recipient of the prestigious 2009 ASCE Moisseiff award for the paper "Nonlinear Seismic Response Analysis of Steel-Concrete Composite Frames". He was also awarded the EASD 2011 Junior Research Prize in the area of Development of Methodologies for Structural Dynamics by the European Association of Structural Dynamics (EASD), the Best Paper Award for Young Experts at the 12th International Symposium on Structural Engineering (ISSE-12), the 2012 TAF Outstanding Under-graduate Teaching Award by the LSU Tiger Athletic Foundation (TAF), the ASCE 2011 and 2012 Outstanding Reviewer Award for the ASCE Journal of Structural Engineering, and the 2017 LSU College of Engineering Longwell Award for Instructor Excellence. His paper "Performance-Based Hurricane Engineering (PBHE) framework" has been recognized as one of the five most cited papers in the period January 2013-June 2016 among the papers published in Structural Safety (Elsevier). He is a member of the Editorial Board of the ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, and of Sustainable and Resilient Infrastructure (Taylor and Francis). He has received approximately $2M of competitive research funding and his research has been and is currently founded by the Louisiana Board of Regents, the Longwell Foundation, the LSU Council on Research, the Louisiana Department of Transportation and Development, the LSU Coastal Sustainability Studio, the Louisiana Department of Wildlife and Fisheries, and the National Science Foundation (NSF).

Per maggiori informazioni si prega di contattare il Prof. Alessandro Zona
alessandro.zona@unicam.it
tel. 320 875 1580